



## HOW TO USE WICKES LEAD SHEET AND ACCESSORIES

Wickes lead sheet conforms to BSEN12588:2006 and is the ideal material to use for flashings and weatherings. It is extremely malleable and can easily be bent and dressed to fit the various types of contoured roofing tiles used on both old and

modern buildings.

When fitted correctly, lead sheet is a very long-life material which makes it ideally suitable for flashing over other long life materials such as tiles, slates and the many types of Wickes uPVC and Hardwood conservatories.



**This brief guide covers the following:**

- Clips and Clipping
- Cover Flashings
- Soakers and Step Flashings
- Pitched Valley Gutters
- Ridges and Hips
- Flashings to Windows
- Small Extensions and Conservatories
- Porches and Bay Window Tops

### TOOLS REQUIRED

The tools required for fitting lead sheet are a dresser, bossing stick, straight snips, hammer, plugging chisel, straight rule, lead welding equipment or soldering iron.

### LEAD SHEET

Lead sheet for flashings is most commonly sold in 3m rolls.

Code numbers relate to thickness - the higher the Code number the thicker the lead - see table A. Wickes stock Code 4 in five widths, 150mm, 240mm, 300mm, 390mm and 450mm.

**Before commencing any leadwork it is important to remember the following basic rules:**

Individual pieces of lead sheet must not exceed the recommendations of the Lead Sheet Association. In particular, each piece of flashing in Code 4 must be no longer than 1.5m.

**In exposed** positions the use of Code 5 will provide a greater resistance to wind lift, although the use of adequate edge clips is still of paramount importance. This is particularly relevant when fixing ridges and hips as detailed later.

**Fixings must** hold the lead securely in position without restricting thermal movement. With flashings, regular expansion joints (laps) will overcome the restriction caused by lead wedging along one side.

### KEEP INFORMED

- Look for other Good Idea Leaflets that could help you with your current project.
- Check that your Good Idea Leaflets are kept up to date. Leaflets are regularly changed to reflect product changes so keep an eye on issue dates.
- If you would like to be put on our mailing list for the Wickes booklet, call our Freephone number which is: **0500 300 328**
- Visit our website at [www.wickes.co.uk](http://www.wickes.co.uk)

Nails and screws should have a similar life expectancy to that of the lead, therefore use copper, brass or stainless steel - never galvanised or aluminium fixings.

Joints must allow for thermal movement but also remain weathertight for the position where they are used.

#### OTHER MATERIALS REQUIRED

##### PATINATION OIL

On completion of all leadwork an application of patination oil is required.

##### SEALANT

Where lead is turned into brickwork or masonry a sealant is required for pointing.

##### CLIPS

Where clips are required, fixing details are shown later.

#### NAILS

If lead is to be fixed by nailing it is important to use the correct nails. Wickes supply copper clout nails in packs of 50 - product code 510-810.

#### CLIPS

Lead clips are only suitable for sheltered exposures. For most situations tinned copper or stainless steel should be used. But why do so many clips fail in high wind conditions? Mainly because the fixing position is not suited to the exposure.

Although the spacing of clips is important and the material used should relate to the exposure it is likely to receive, the main consideration must always be the position of the fixing points. **Diagram 1** shows clip details.

#### A few basic rules . . .

Space clips at 300mm to 500mm intervals to suit exposure.

Fix clips with Wickes copper clout nails. If in doubt about exposure, use additional fixings.

Where extra fixings cannot be used, e.g. flashings over glazing, use a thicker gauge clip material.

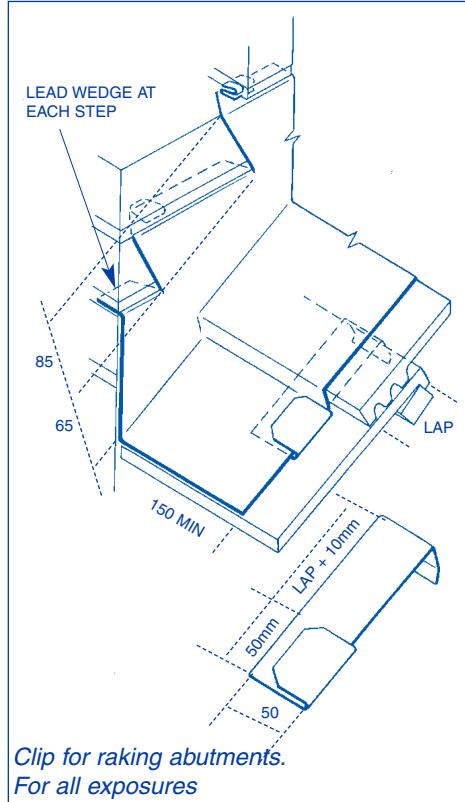
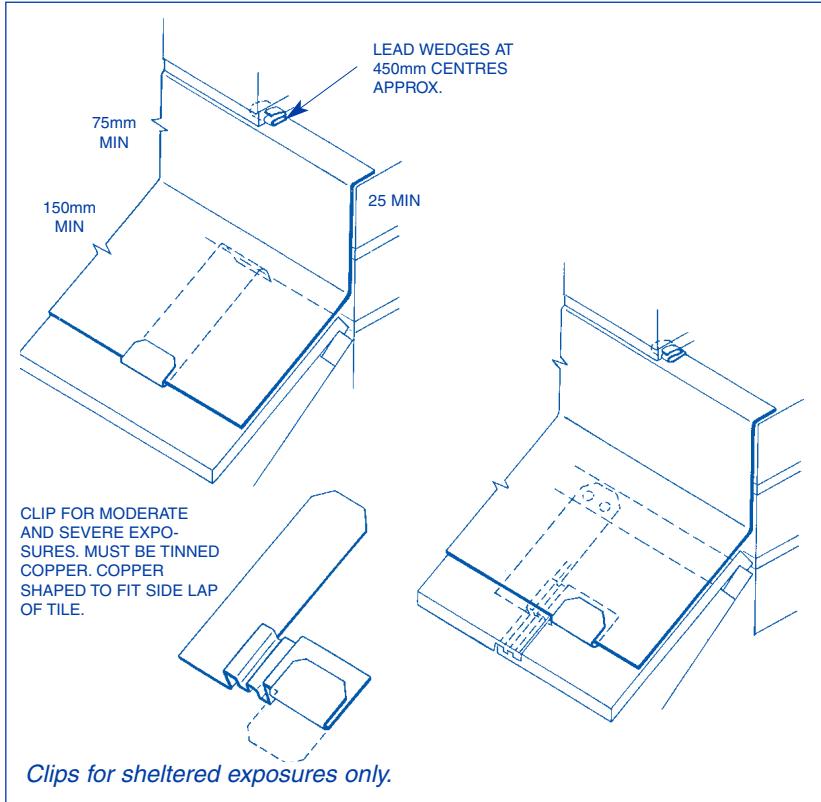
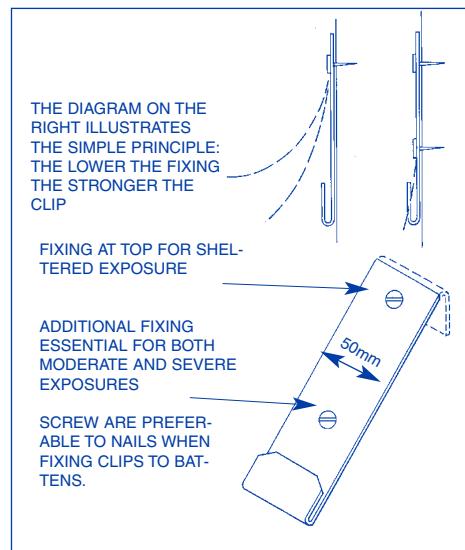
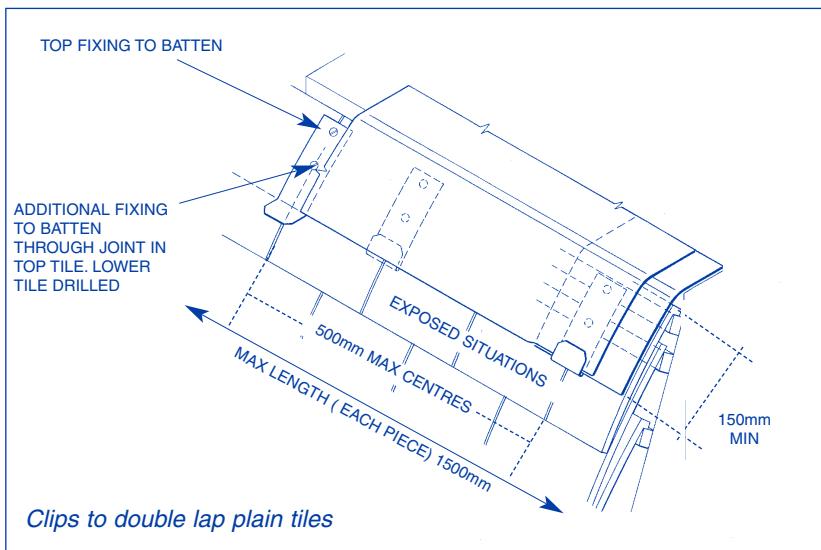
#### COVER FLASHINGS

These are used where a felt or similar roof covering turns up against a wall.

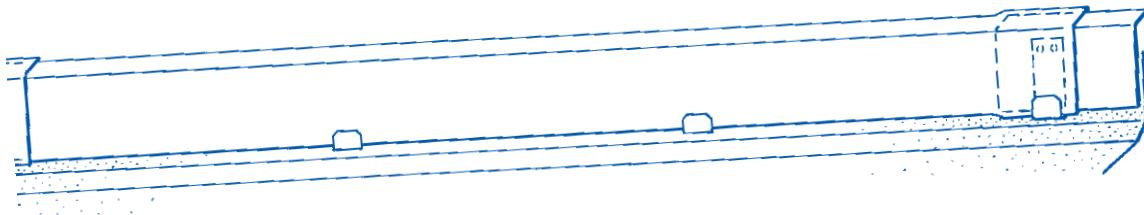
Code 4 lead sheet is normally used for this work and it is important that the length of each piece of flashing does not exceed 1.5m. Laps between pieces should not be less than 100mm.

## 1. Clips & Clippings

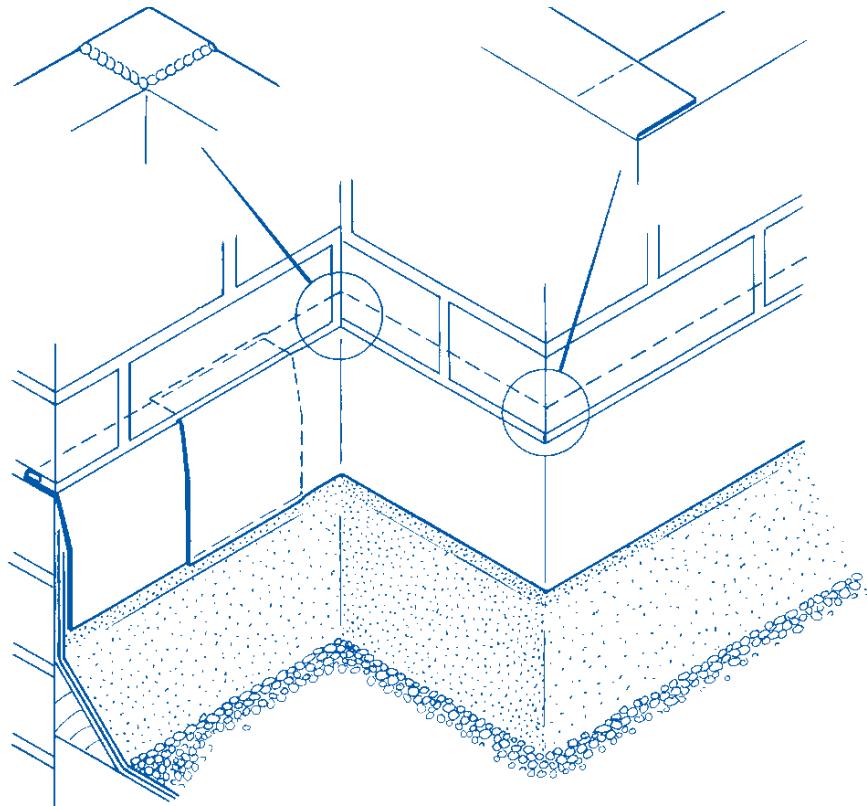
All dimensions in mm unless otherwise stated



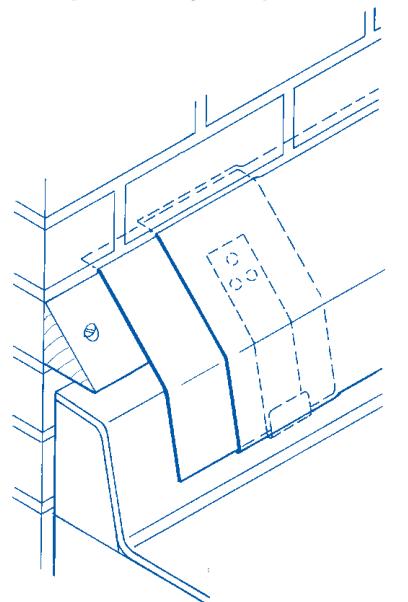
## 2. Cover flashing to built - up and asphalt roofing



## 3. Cover flashing - corner details



### 4 . Covers flashing over kerb upstand ( incorporating an expansion joint )



Use a straight piece of batten to mark a line 25mm from the top edge of each flashing piece and then bend the lead with the use of the dresser to form a 25mm turn into the brickwork. Each piece of flashing is secured into a joint in the brickwork with at least three lead wedges.

Lead wedges are simply 25mm wide pieces of lead folded over three or four times to suit the width of the mortar joint. The wedges are driven into the joint with a plugging chisel.

Copper or stainless steel clips are positioned along the lower edge of the flashing to suit the exposure of the building - see **Diagram 2**.

At internal and external corners the 25mm turn-in is cut and the flashing folded as shown in **Diagram 3**. Note that the lap joint is adjacent to the corner and **NOT in the corner**. The turn-in on the

external corner is simply folded as shown whereas it is necessary to insert a small piece of lead in the internal corner to ensure a weathertight joint. This can be achieved by either lead welding or soldering.

Where the roof incorporates an expansion joint the flashings are detailed as shown in **Diagram 4**. Without the fillet the lead would sag onto the top of the kerb. This will create a section of horizontal lap through which water will seep into the area below. The fillet also provides a positive fixing for the clips.

### SOAKERS & STEP FLASHINGS

Soakers and step flashings are used to weather a raking abutment where the roof is covered with slates or plain tiles. While Code 3 is suitable for soakers, Code 4 is the minimum thickness to use for all flashings.

Soakers weather between the wall and the roof covering. Soaker lengths vary with the types of slates or tiles used.

### Diagram 5.

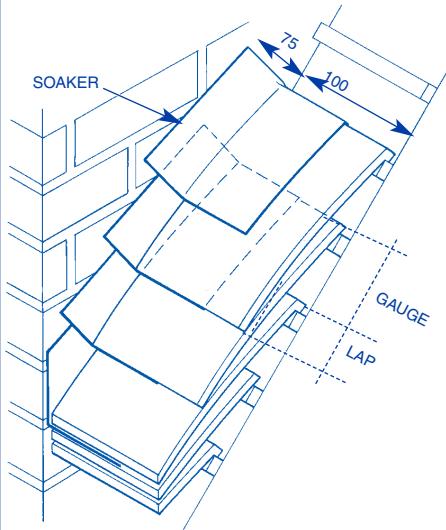
Minimum upstand is 75mm and the extension under the tiles is 100mm. A soaker is held in place by turning the top edge over the tile. The upstands are not fixed but are made weathertight with a Code 4 flashing. **Diagram 6.**

Setting out the flashing is achieved by first marking the water line on a length of lead 65mm from the lower edge. No cuts are made below this line. The lead is held against the wall and the mortar joint lines are marked as also shown in diagram 6. An allowance of 25mm is made for turning each step into the wall and the surplus area then cut out. After bending, each step is wedged into the wall.

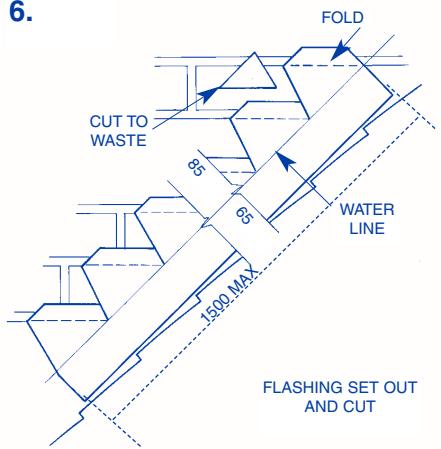
Points to note are that no piece of flashing should exceed 1.5m in length and an allowance must be made when measuring for overlapping not less than 100mm as shown in **Diagram 7**.

Point all flashings with Lead Sheet Sealant.

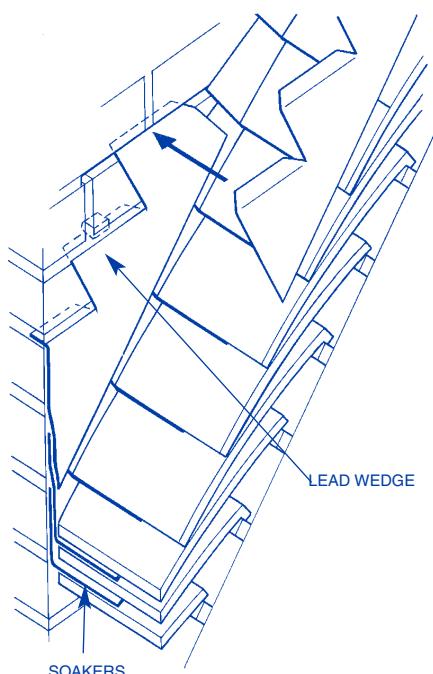
## 5. Abutment flashing with soakers



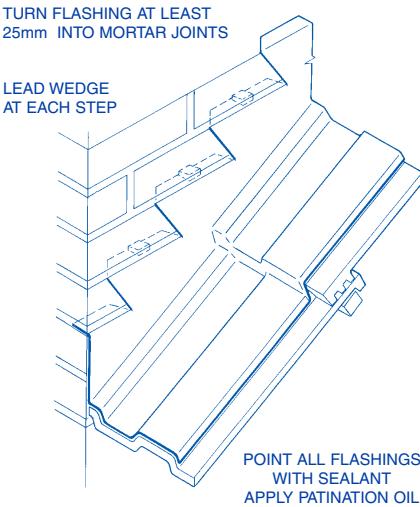
6.



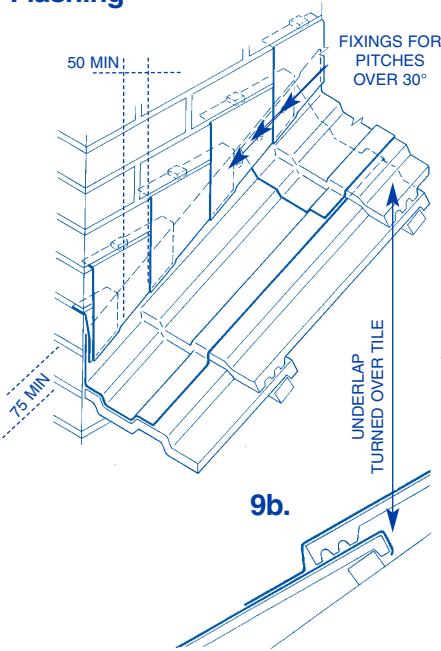
7.



## 8. Step & Cover Flashing



### 9a. Single Step & Cover Flashing



### STEP & COVER FLASHINGS

This flashing is minimum Code 4 lead sheet is prepared and fixed as described and shown for step flashings over soakers but with an additional allowance of 150mm to cover over the tiles. This will make an overall girth of not less than 300mm. **Diagram 8**. In all cases the free edges of the flashings should be clipped to suit the exposure.

### SINGLE STEP ABUTMENT FLASHINGS

Single step flashings are particularly suitable for weathering the abutments to stone walls but they are also used on brick abutments in exposed positions. In these situations the vulnerable point on a step flashing (where the raking cut meets the turn-in) is overcome by lapping the steps 50mm. **Diagram 9a**. Note that the upstands of the cover flashings are not wedged into the wall but are retained by turning the top edge of the lead over the tile. **Diagram 9b**. For pitches over 30° extra fixings will be required in the top of

each piece as shown in diagram 9a.

### PITCHED VALLEY GUTTERS

Code 4 is the minimum thickness to use. To provide a weathering life equal to that of the tiles or slates which overlap the lead on each side, pitched valley linings should be fixed in lengths not exceeding 1.5m. Each piece should be fixed across the top with two rows of copper clout nails. **Diagram 10**.

Valley boards should be level with the tops of the rafters so that tiling battens and tilting fillets are the same height. With traditional roofing the valley boards can be recessed into the rafters.

However when roof trusses are used the boards must be cut to fit between the rafters. For pitches of 30° and above, the lap between pieces should be 150mm, increasing to 220mm for a pitch of 20°.

### Some important points . . .

Don't nail the lead down the sides as this will restrict free thermal movement and result in failure.

Don't lay sarking felt under the lead. It will cause the lead to stick to the boards in hot weather.

Use copper or stainless steel clout nails to fix the lead - NOT galvanised steel or aluminium.

The single welts at the edges of the linings are necessary to provide a weather check.

When bedding tiles down the valley do not mortar directly onto the lead - use a separator e.g. cement fibre sheet - see diagram 10.

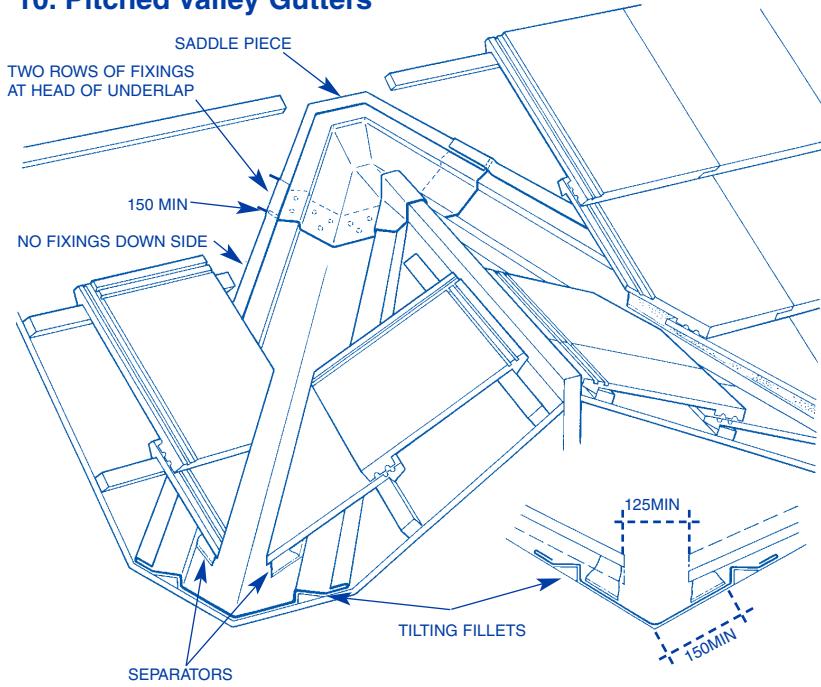
### LEAD RIDGES & HIPS

Lead ridges and hips are normally used on slated roofs. A wood roll is required and should be fixed as shown in **Diagram 11**. The flashings must extend over the slates or tiles a minimum of 150mm on each side.

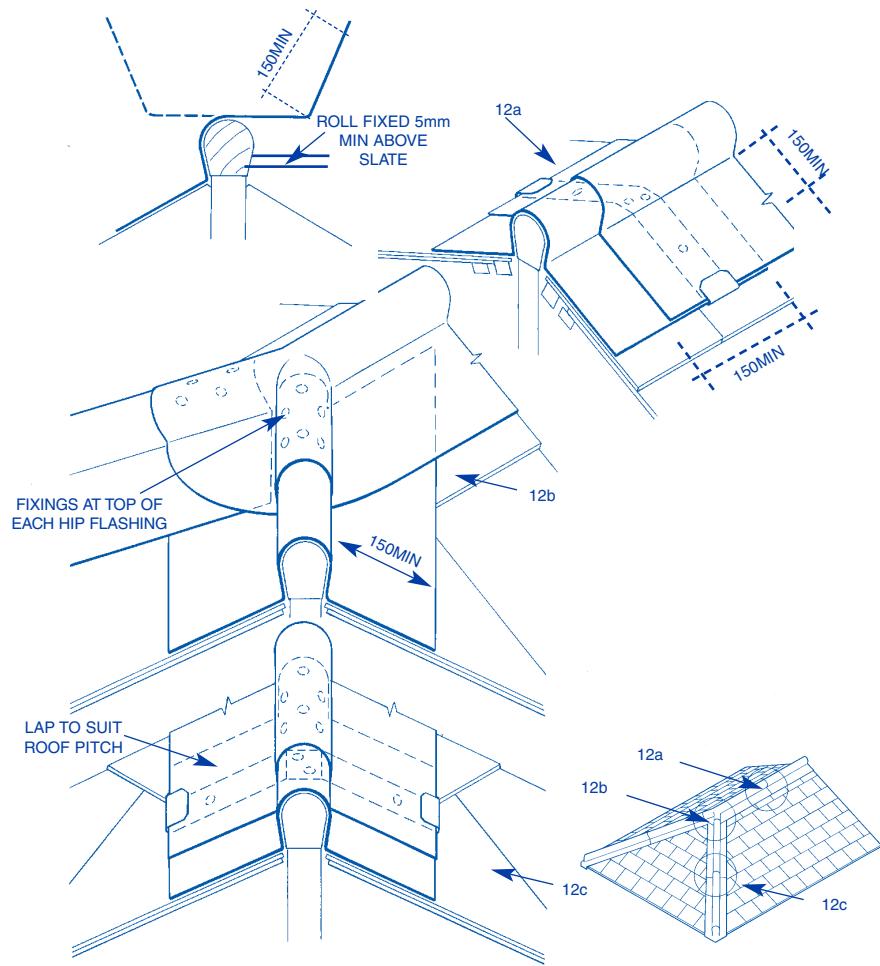
A practical method of fitting the flashings that will avoid thinning at the corners is to form the lead into a trough as in **Diagram 11**. The lead is pressed down over the roll to fit closely to both the roll and the roof surfaces. Use a minimum of Code 4 lead sheet for both ridge and hip flashings and again, the maximum length of each piece should not exceed 1.5m.

Laps between pieces should not be less than 150mm - see **Diagram 12a** - although for pitches below 30° the hip laps should be increased to 200mm. It is important to fix the top of each piece of hip flashing to the wood roll with copper clout nails - see **Diagram 12c**. Nails are not required at the ridge laps. Clip fixings along the sides of the flashings are absolutely essential and

## 10. Pitched Valley Gutters



## 11 & 12. Ridges & Hips



should be spaced to suit the exposure of the building. Note the extra fixings in the clips shown on both the ridge and hip laps - see **Diagram 12**. In all but very sheltered exposures these fixings will be required. At the junction between ridge and hip flashings - **Diagram 12b** - and also where the roll terminates at the hip end, the lead will need to be dressed to fit or alternatively can be formed by

leadwelding or soldering.

### FLASHINGS TO WINDOWS

Window flashings are most often required where windows are fixed into walls that are covered with tiles or slates but are also used with other cladding e.g. timber or PVC weatherboarding. In all cases the detailing of the flashings is similar and as with all lead flashings the maximum

length when using Code 4 lead sheet is 1.5m.

**Diagram 13** shows the detailing at a sill corner. Although the corner can be dressed or bossed to shape it is more practical to introduce a gusset as shown which can be leadwelded or soldered before the sill flashing is placed in position. For windows that are wider than 1.5m, 100 - 150mm laps should be used between sill flashing pieces depending on the exposure. **Diagram 14** shows the window in position.

In cases where the window is set back from the wall covering a jamb, flashing will be required to prevent water from penetrating down behind the sill upstand. **Diagram 15** shows sill and jamb flashings in position. The length of flashing pieces should not exceed 1.5m.

Laps between pieces of jamb flashing and where the jamb flashing laps over the sill flashing, should not be less than 75mm.

**Diagram 16** shows the finished detail.

The apron extends 150mm down the face of the wall covering and this is often cut to a scalloped pattern to suit the spacing of the tiles or slates.

### CANOPIES & PROJECTIONS

Lead sheet is often used for covering small flat roofs on porches, door hoods and bay windows. Examples are shown in **Diagrams 17 and 18**. Note that the downstand of these weatherings is often cut to a feature pattern - see diagram 18. To achieve long life it is important with all leadwork to limit the maximum size and this is governed by the thickness of the lead used. **Diagram 19** shows the recommended maximum sizes when using Codes 4 - 7.

Although it is practical to cover a 2.5m long by 600mm wide area with Code 4 lead it would require the use of joints - usually wood cored rolls. Using Code 4 it may be possible for a do-it-yourselfer to fit these joints but it is usually necessary to use a skilled leadworker.

The upstand against the wall should not be less than 100mm and cover flashings over the upstand - previously described - should not exceed 1.5m in length.

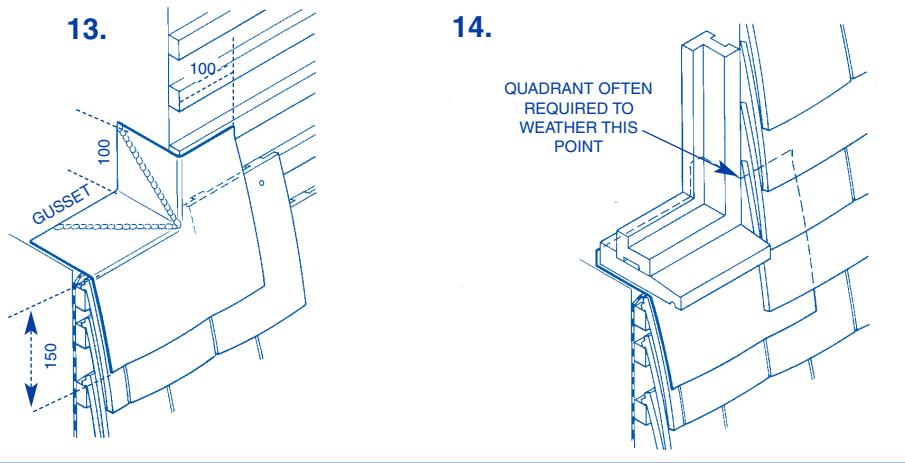
### A few tips . . .

Don't use an underlay which could cause adhesion to the substrate during hot weather. Use a building paper or a geotextile underlay.

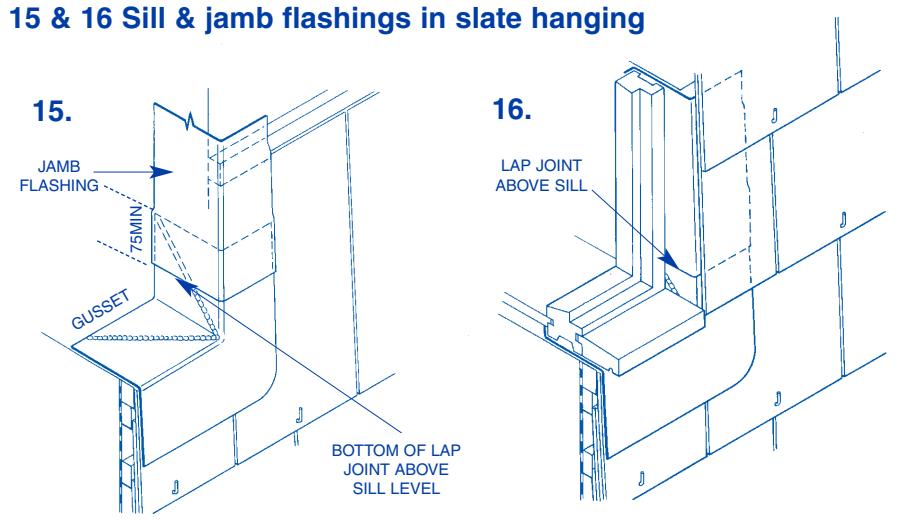
Don't nail or tack the edges to prevent wind lift. Use clips.

Never oversize the bays. Divide them with wood-cored roll or, alternatively, use a thicker sheet.

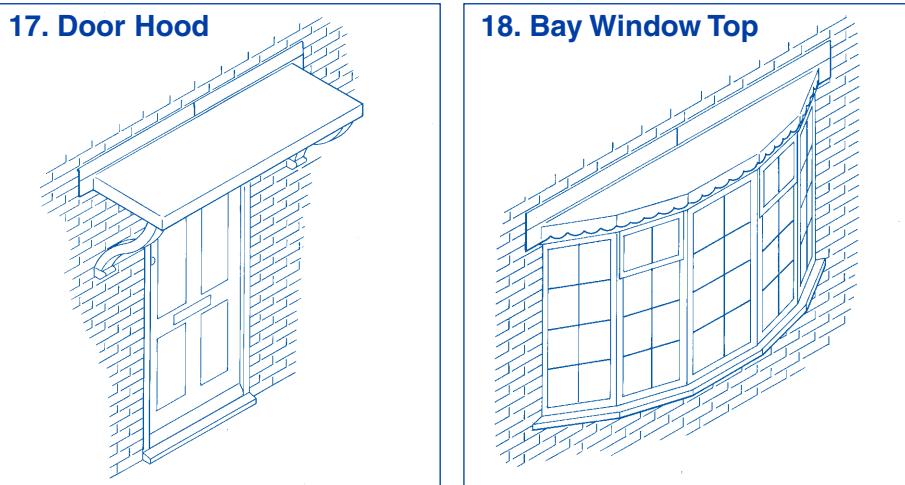
## 13 & 14 Sill flashings in tile hanging



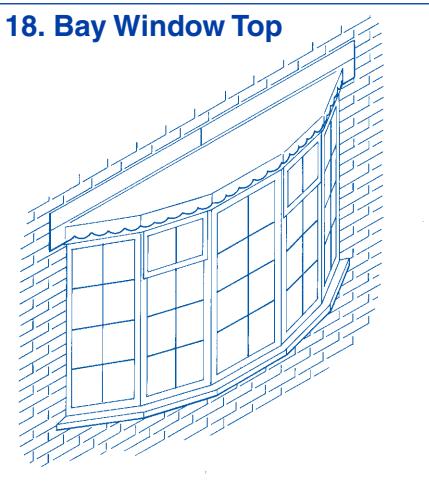
## 15 & 16 Sill & jamb flashings in slate hanging



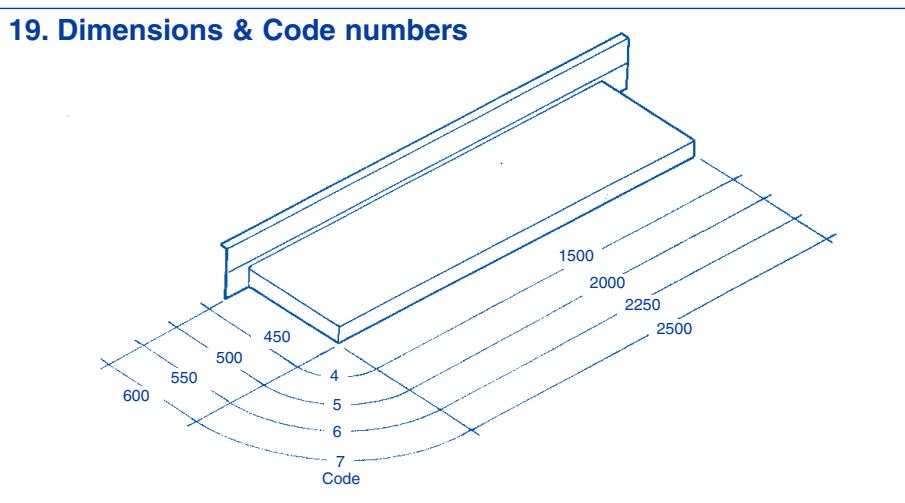
## 17. Door Hood



## 18. Bay Window Top



## 19. Dimensions & Code numbers



## SMALL EXTENSIONS & CONSERVATORIES

**Diagram 20** shows diagrammatically the type of extension or conservatory that is often added to a building. Where the structure abuts the wall a flashing will be required to prevent water from penetrating between the wall and the top of the tiles or other roofing material. Several types of Wickes lean-to conservatories also require a flashing where the polycarbonate roofing sheets abut the wall. Code 4 lead sheet should be used for these flashings with lengths not exceeding 1.5m and end laps between pieces not less than 100mm.

The upstand against the wall should be not less than 75mm and the top edge is turned 25mm into the brickwork and fixed with lead wedges and lead sheet sealant as previously described.

The extension over the roofing material should not be less than 150mm and the front edge of the flashings should be clipped to suit the exposure of the building.

### PATINATION OIL

Patination Oil should be applied to all leadwork. It can prevent unsightly white staining on materials fixed below the lead and provides a pleasing surface appearance.

### It is important to:

Shake the can vigorously before use. Apply the oil with a soft cloth as soon as is practical after fixing, but never later than at the end of the day's work.

Lift flashings and coat the underside of the lead for about 50mm from the edge.

This can prevent white 'dribble' when rainwater penetrates up under the flashing in storm conditions.

Coat the lead before turning up clips around edges.

Remember to coat between laps.

**Don't use linseed oil as an alternative to patination oil.**

### NAILS

Nails and screws should have a similar life expectancy to that of the lead, therefore use copper, brass or stainless steel - NEVER galvanised or aluminium fixings. Wickes sell copper clout nails.

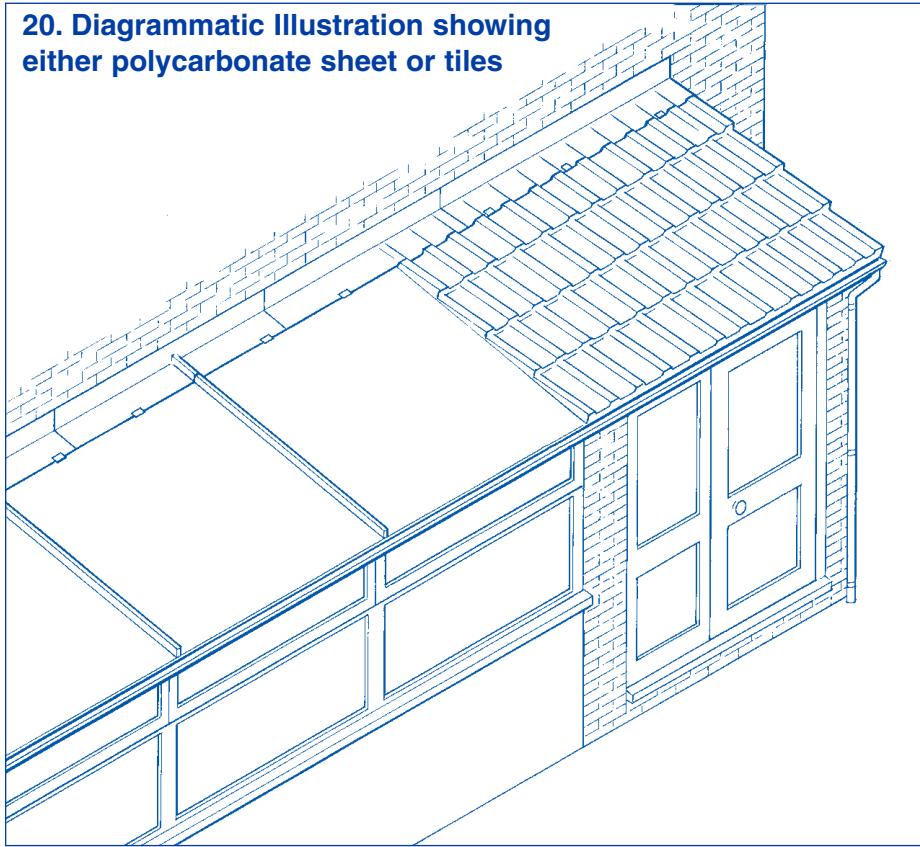
### LEAD SHEET SEALANT

Why is it that so many water penetration problems occur at abutments?

The answer often is that mortar is not a satisfactory long-term pointing where lead flashings turn into joints in brickwork or masonry.

The mortar is unable to adhere to both the brick and the lead when subject to

## 20. Diagrammatic Illustration showing either polycarbonate sheet or tiles



changes in temperature. It soon cracks, particularly in sunny exposures, allowing water to penetrate, causing dampness below. In many cases the problem is made worse by poor cleaning out of the joint which results in a wedge-shaped pointing which quickly cracks away from the brickwork.

Now there is a practical alternative to mortar pointing - Wickes Lead Sheet Sealant. This one-part, neutral cure, high-performance silicon-based sealant has been specially formulated for use with lead sheet flashings and its elastic properties make it ideally suited for pointing between lead and brickwork or masonry.

### **Lead Sheet Sealant**

The sealant is specifically designed for pointing joints between lead and brickwork or masonry.

Colour matched to lead.

Provides a long-term, flexible joint, which can absorb temperature changes.

Avoids the problems of pointing with wet mortar, particularly in hot or frosty conditions.

Quicker, cleaner and easier to use than mortar.

The Lead Sheet Association recommends sealant.

### **HEALTH & SAFETY FOR LEAD**

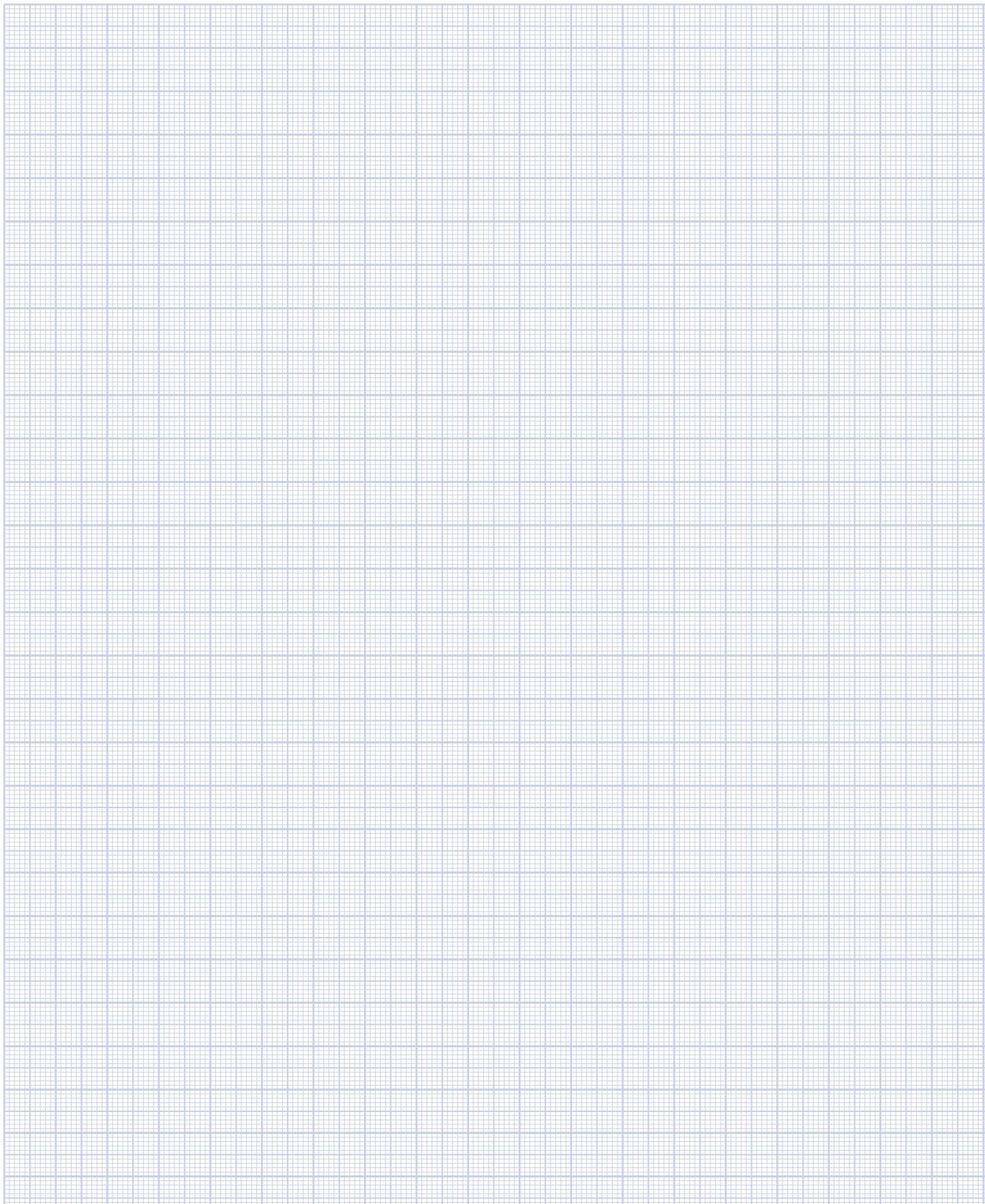
Lift carefully, taking care not to strain your back.

Don't smoke.

Wash your hands directly after contact with lead.

## PLANNING

Every job needs careful planning, use this leaflet and a copy of the Wickes booklet to help you price your project.



Whilst every care has been taken to ensure that the product design, descriptions, specifications and techniques of constructing the products are accurate at the date of printing, Wickes products will inevitably change from time to time and the customer is advised to check that the design, descriptions, specifications and techniques of constructing any of the products described in this leaflet are still valid at the time of purchase or placing an order.

© Wickes Building Supplies Limited 2008

All rights reserved. No part of this publication may be produced or transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise or stored in any retrieval system of any nature without the written permission of the copyright holder and the publisher.